

WHAT IS CLAIMED IS:

1. A fuel source for a fuel cell, comprising:
a housing having an outlet;
a structure having a portion in the housing, the structure defining a cavity and having a surface defining an opening in fluid communication with the cavity; and
a fuel in the housing, the fuel being in fluid communication with the outlet through the opening and the cavity of the structure.
2. The fuel source of claim 1, wherein the structure comprises an elongated tube and the cavity is a lumen of the tube.
3. The fuel source of claim 1, wherein the opening is configured to reduce flow of non-gaseous fuel through the opening.
4. The fuel source of claim 1, comprising a plurality of structures in the housing.
5. The fuel source of claim 1, wherein the structure comprises a hydrophobic material.
6. The fuel source of claim 1, further comprising a diffusion tube in fluid communication with the outlet.
7. The fuel source of claim 6, further comprising a valve capable of selectively reducing fluid flow through the diffusion tube.
8. The fuel source of claim 1, further comprising a valve capable of selectively reducing fluid flow through the outlet.
9. The fuel source of claim 8, wherein the valve comprises a slit valve.

10. The fuel source of claim 1, wherein the housing has an inlet, and the fuel source further comprises a diffusion tube in fluid communication with the inlet.

11. The fuel source of claim 1, wherein the fuel comprises a gel.

12. The fuel source of claim 1, wherein the fuel comprises a liquid.

13. The fuel source of claim 1, wherein the fuel comprises an alcohol.

14. The fuel source of claim 13, wherein the fuel comprises methanol.

15. The fuel source of claim 1, further comprising a carbon dioxide getter in fluid communication with the fuel.

16. The fuel source of claim 1, wherein the housing comprises a fire-retardant material.

17. The fuel source of claim 1, wherein the housing is configured to engage with a fuel cell system.

18. A fuel source, comprising:
a housing having an outlet;
a plurality of elongated tubes having portions in the housing, each tube defining a lumen and having a surface defining a plurality of openings; and
a fuel comprising a gel in the housing, the fuel being in fluid communication with the outlet through the openings and the lumens of the tubes,
wherein the fuel source is configured to be in fluid communication with a fuel system.

19. The fuel source of claim 18, wherein the fuel comprises methanol.

20. A fuel cell system, comprising:
a fuel cell;
a fuel source in fluid communication with the fuel cell, the fuel source comprising a fuel comprising an alcohol; and
a gas mover between the fuel cell and the fuel source along a fluid flow path.
21. The fuel cell system of claim 20, wherein the fuel source comprises a housing having an outlet, and the gas mover is between the outlet and the fuel cell along the fluid flow path.
22. The fuel cell system of claim 20, wherein the fuel source comprises a housing having an inlet, and the gas mover is between the inlet and the fuel cell along the fluid flow path.
23. The fuel cell system of claim 20, wherein the gas mover comprises a fan.
24. The fuel cell system of claim 20, further comprising a diffusion tube between the fuel cell and the fuel source along the fluid flow path.
25. The fuel cell system of claim 20, further comprising a valve between the fuel cell and the fuel source along the fluid flow path.
26. The fuel cell system of claim 20, wherein the fuel source comprises a gel.
27. The fuel cell system of claim 20, wherein the fuel source comprises a housing having an outlet, a structure in the housing, the structure defining a cavity and having a surface defining an opening in fluid communication with the cavity; and a fuel in the housing, the fuel being in fluid communication with the outlet through the opening and the cavity of the structure.

28. The fuel cell system of claim 20, wherein the fuel source comprises a housing having an outlet; a plurality of elongated tubes in the housing, each tube defining a lumen and having a surface defining a plurality of openings in fluid communication with the lumen; and a fuel comprising a gel in the housing, the fuel being in fluid communication with the outlet through the openings and the lumens of the tubes.

29. A method of operating a fuel cell system, the method comprising:
passing a fuel gas through an opening and a cavity of a structure having a portion in a fuel source; and
contacting the fuel gas to an anode of a fuel cell.

30. The method of claim 29, comprising passing the fuel gas through a plurality of openings and a plurality of cavities of a plurality of structures having portions in the fuel source.

31. The method of claim 30, wherein the structures comprise elongated tubes.

32. The method of claim 29, further comprising passing the fuel gas through a diffusion tube.

33. The method of claim 29, further comprising restricting the fuel gas with a valve.

34. The method of claim 29, further comprising fanning the fuel gas from the fuel source to the fuel cell.

35. The method of claim 29, further comprising fanning a gas from an outlet of the fuel cell system to the fuel source, and contacting the gas to a fuel.

36. The method of claim 29, wherein the fuel source comprises a liquid fuel or a gel fuel.

37. The method of claim 29, wherein the fuel source comprises a fuel comprising methanol.

38. A method of operating a fuel cell system, the method comprising:
fanning a fuel gas from a fuel source to a fuel cell, the fuel source comprising an alcohol; and
contacting the fuel gas to an anode of the fuel cell.

39. The method of claim 38, further comprising passing the fuel gas through a diffusion tube.

40. The method of claim 38, further comprising reducing the flow of the fuel gas.

41. The method of claim 38, wherein the fuel source comprises a liquid fuel or a gel fuel.

42. A method of operating a fuel cell system, comprising:
fanning a gas from an outlet of the fuel cell system to a fuel source; and
contacting the gas with a fuel in the fuel source, the fuel comprising an alcohol.

43. The method of claim 42, further comprising passing the gas through a diffusion tube.

44. The method of claim 42, further comprising contacting the gas to a desiccant or a carbon dioxide getter.

45. The method of claim 42, further comprising reducing the flow of the gas.

46. The method of claim 42, wherein the fuel source comprises a liquid fuel or a gel fuel.

47. A method of operating a fuel cell system, comprising:
passing a fuel gas through a plurality of openings and a plurality of cavities of a plurality of structures having portions in a fuel source;
fanning the fuel gas from the fuel source to a fuel cell; and
contacting the fuel gas to an anode of the fuel cell.
48. The method of claim 47, further comprising passing the fuel gas through a diffusion tube.
49. The method of claim 47, further comprising reducing the flow of the fuel gas.
50. The method of claim 47, further comprising fanning an outlet gas from the fuel cell to the fuel source, and contacting the outlet gas to a fuel in the fuel source.
51. The method of claim 50, further comprising passing the outlet gas through a diffusion tube.
52. The method of claim 50, further comprising reducing the flow of the outlet gas.
53. The method of claim 49, wherein the fuel source comprises a liquid fuel or a gel fuel.
54. A fuel source for a fuel cell, comprising:
a housing having an outlet;
a structure having a portion in the housing, the structure defining a cavity and comprising a gas-permeable, liquid-impermeable material; and
a fuel in the housing, the fuel being in fluid communication with the outlet through the opening and the cavity of the structure.
55. The fuel source of claim 54, wherein the gas-permeable, liquid-impermeable material comprises polytetrafluoroethylene.

- 56. The fuel source of claim 54, wherein the fuel comprises a liquid or a gel.
- 57. The fuel source of claim 54, comprising a plurality of structures in the housing.